Application No.: 09/318105 Docket No.: PAS-094RCE

REMARKS

Claims 1-26 are currently pending in the application of which claims 1, 8, 15, 19 and 24 are independent.

Double Patenting Rejection

Applicants have executed a terminal disclaimer for claims 1, 9, 14, 19, 23, 27 and 30 with regard to pending co-owned Application number 09/316, 549.

Claim Rejections Pursuant to 35 U.S.C. §103(a)

Claims 1-26 were rejected by the Examiner under 35 U.S.C. §103(a) as being unpatentable for obviousness over Fane, "Your Table is Waiting..." CADalyst, January 1999, pages 70-75 (hereafter "Fane"), in view of Cottrell et al., "CHDStd- A Model for Deep Submicron Design Tools", Design Automation Conference 1998, Proceeding of the ASP-DAC 1998, Asia and South Pacific, pages 249-255 (hereafter "Cottrell"). For the reasons set forth below, the rejections are respectfully traversed.

Summary of Claimed Invention

The claimed invention describes a computer system running a CAD package which is interfaced with an External Application Program (EAP). The CAD package includes a model of an object. The model of the object includes output data from the EAP which is integrated into the model. The model is then modified and a determination is programmatically reached without user input that the modification requires recalculation of the EAP output data. New input data is sent to the EAP without user input in response to the determination that the modification of the model requires recalculation of the EAP output data. New output data is then received back from the EAP and reintegrated into the model. The claimed invention discusses a two way communication process by which the CAD package and model automatically determines in response to model changes the need to send new input data to the EAP, run it, and obtain new output data from the EAP.

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Summary of Claim Amendments

Applicants have amended the independent claims to specifically indicate that the EAP is located in a separate address space from the CAD program/package. Applicants respectfully suggest that this clarification is consistent with the presentation of the "EAP" limitation previously discussed throughout prosecution and that any other interpretation would read the "external" part of the "external application program" out of the limitation. Since the clarification does not change the meaning of the term, Applicants respectfully suggest that the Amendment should not require an additional art search by the Examiner.

Summary of Fane

Fane describes a computer system running a CAD package that is used in conjunction with a Microsoft Excel spreadsheet. The article describes a methodology to tie a set of parameters to the Excel spreadsheet. The CAD model may be used to create a spreadsheet holding values of model components. Existing spreadsheets may also be associated with the model. The Excel spreadsheet then acts as a database from which the CAD model is fed parameter values. Once the spreadsheet has been set up, data is communicated in one direction only, from the spreadsheet to the CAD model. Put another way, data is retrieved from the spreadsheet and the model components are changed to reflect the spreadsheet contained values. The CAD model does not feed values to the Excel spreadsheet after the association between the two files has been established. Any additional updating of the model is done by a user manually selecting an update control from the CAD program interface.

Summary of Cottrell

Cottrell et al discuss the Chip Hierarchical Design System (CHDS) which is based on the Integrated Data Model (IDM) modular technology developed by IBM. CHDS is used in semiconductor chip design. The Cottrell paper discusses the use of IDM and CHDS as the basis for an industry-open specification referred to as CHDS Technical Data Specification (CHDStd). CHDStd is data-centric in that complete design information and inter-relationships are centrally managed in memory, maintained persistently, and surfaced to applications via standardized

access methods. The IDM technology supports a callback feature that allows a modularized application to register methods to be invoked on specific object events.

Argument

The combination of Fane in view of Cottrell fails to teach or suggest all of the claim elements of Applicants independent claims.

Applicants' specification (and the amended claims) describe an External Application Program (EAP) as being located outside the address space of the CAD system. "EAP 14 is "external" in that it is outside of CAD package 10 and does not execute within the address space allocated to the CAD package"(see for example, page 5, lines 26-27 and independent claims). The EAP may thus be located in a separate address space on the same computer as the CAD system or on a separate computer system. The system described in Cottrell clearly indicates it is not an EAP. The model and the application are located in the same address space. The Examiner's attention is respectfully directed to the final paragraph 6, left column of page 252 of Cottrell:

> Within a single tool, program code can be easily modularized to take advantage of this event-driven processing. However, to open up such incremental cooperation between two separate programs, allowing plug-and-play of either, it would be necessary to standardize control interfaces among the component modules. This level of standardization has not been performed and is beyond the scope of the CHDStd [emphasis added].

Furthermore, a close reading of the callback paragraph cited by the Examiner reveals the example in the fifth paragraph, left column, on page 252 of Cottrell, is for an application that has been modularized to callback a routine in the same application upon the occurrence of an object event during the execution of a different part of the same application. The application parts have the same address space. The Examiner's attention is additionally directed to the first paragraph of the right column on page 252 in Cottrell wherein it indicates that the integrated modules being discussed share a single process space.

Applicants' independent claims 1, 8, 15, 19, 24 all include variations of the elements of determining programmatically without user input that modifications to the model require recalculation of the output data from the EAP, that this determination generates new input data being sent without user input to the EAP, and that the corresponding output data is received back from the EAP. All of the updating of the model in Fane occurs in response to manual commands from a user via the CAD program interface (e.g. clicking on an update button). Fane does not teach or suggest the integration of the output data into the model such that future changes to the model require additional calculations to be performed by the EAP. Fane also does not teach or suggest a programmatic determination that a recalculation of EAP data is necessary.

Cottrell also does not teach or suggest these missing elements. Cottrell does not teach or suggest an EAP, an element central to all of Applicants claims. Cottrell also appears to teach away from the combination suggested by the Examiner in that it indicates that an integration between address spaces has not been performed because of difficulty (see paragraph 6, left column, page 252 of Cottrell). Cottrell is discussing the modularization of a single application and the calling of a routine in the same application in response to object events occurring during execution. Put another way, both the model and the application (CAD package) in Cottrell are operating in the same address space. The other elements of Applicants claims, the programmatic sending of new input data to an external application program and the resulting receipt and integration of the newly generated output data are similarly not taught or suggested by Cottrell. Applicants respectfully suggest that the system being discussed in Cottrell is a stand-alone application capable of modularization that is clearly not analogous to the claimed invention and does not teach the elements of Applicants independent claims missing from Fane.

Accordingly, since the combination of Fane in view of Cottrell fails to teach or suggest all of the elements of Applicants claims, Applicants request the withdrawal of the rejections directed to claims 1-26 and the allowance of the claims.

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CONCLUSION

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Applicant believes no fee is due with this statement. However, if a fee is due, please charge our Deposit Account No. 12-0080, under Order No. PAS-094RCE from which the undersigned is authorized to draw.

Dated: August 19, 2005

Respectfully submitted,

By _____

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